Washington Park

ARBORETUM BULLETIN

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Concerning This Issue. . .

By this time of year, knowledgeable gardeners have figured out if they should plant their peas on George Washington's original birthday or on President's Day. The days are getting longer, and ornamental cabbages are making way for the wide variety of plants that signal spring in the Northwest.

On these pages, Kendall Gambrill confesses his weakness for certain hybrid roses and discusses their place in the landscape. Featured are three hybrids of the extraordinary garden Lakewold, which is the destination that Scot Medbury recommends in the Northwest Garden Explorer. If you become intrigued by the Lakewold roses, Valerie Easton's column suggests dazzling books to read and nearby specialty groups to join.

Wayfarers, doublefiles, and withe-rods may have a place in your garden! Daniel Hinkley elaborates on these and other deciduous *Viburnum* in the first article of a two-part series. Mary Booth's thumbnail sketch of *Fothergilla* outlines its special place among your plants.

Locally, combine history and hiking this spring. Walk among historic trees, planted by historian Edmond Meany, on the University of Washington campus.

Throughout the world, there are regions with climatic, topographical, and biological similarities to ours. Some of these areas can provide new plants for us, under the right conditions. In the fifth of our occasional series on winter-rain regions, Jan Pirzio-Biroli contrasts our region to those others.

The Brian O. Mulligan *Sorbus* collection opens later in the season, and the director emeritus, for whom it is named, tells where specimens came from and in what form. Later, the career of Frederick W. Leissler, Jr., employed by the Arboretum before Mr. Mulligan arrived, is highlighted by Scot Medbury.

Curator Timothy Hohn joins Horticulturist Christina Pfeiffer to explain what's new in the Arboretum and how the sophisticated new computer program keeps track of acquisitions and their locations. In Van Bobbitt's column, he explains that the lawn you love to hate may be affecting the growth of your trees.

In the next issue of the *Bulletin*, we celebrate the thirtieth anniversary of the Japanese Garden. Later this year, the winter issue focuses on the environment. It will be a time for us to explore our important roles in issues that touch all of us, in the Arboretum.

Jan Silver, Editor
The Washington Park Arboretum Bulletin

Thanks to Mrs. Eulalie Wagner for her generous donation, which enables color photographs to appear in this issue.

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Backdrop: Close-up of pink flowering branch of Rosa macrophylla. *Photo by Don Normark, courtesy Center for Urban Horticulture.*

Cover photo by Margaret Mulligan: Rosa foetida 'Austrian Copper', from western Asia, has a broad range of distinctive ornamental qualities, including brilliant color and single flower. It grows in western Washington, but may do better in a hotter, drier climate. For species and hybrid roses used in Lakewold Garden's landscape, see page 2.

The Washington Park Arboretum Bulletin is published quarterly, as a bonus of membership in The Arboretum Foundation. The Arboretum Foundation is a non-profit organization that was chartered to further the development of the Washington Park Arboretum, its projects and programs, by means of volunteer service and fund-raising projects. The Washington Park Arboretum is administered through cooperative efforts between the University of Washington, the Center for Urban Horticulture, and the City of Seattle Department of Parks and Recreation. The programs and plant collections are a responsibility of the Center for Urban Horticulture.

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Steven R Lorton

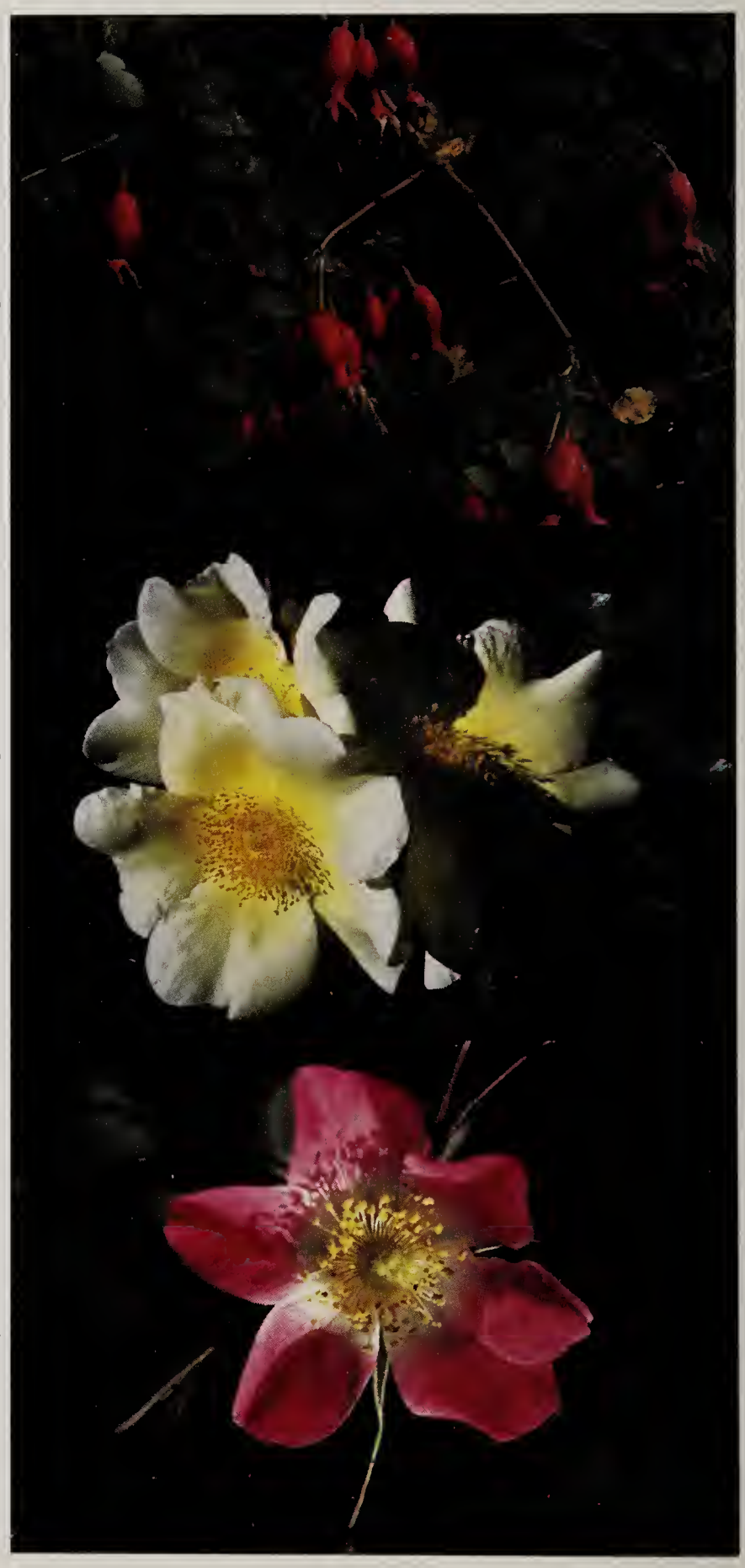
Confessions of a Rosaphobe

by Kendall Gambrill

An asterisk (*) indicates species, including varieties and/or forms, that can be found in the Washington Park Arboretum.

Behavioral scientists have presented me with the Type A and Type B personality classification. Observers of gardeners could note an equally basic division between people who admire roses and people who disparage them. For years, I have been a loyal member of the latter group. Dismissing roses as ''sticker bushes'' suits me fine. But more and more, I catch myself admiring a rose; I have even planted a few examples of this genus whose name had been anathema. I'm ready to admit that there are garden-worthy roses.

The creed of the no-rose gardener holds that roses are ugly landscape plants, susceptible to all sorts of insect and disease attacks. These flower factories require careful site preparation, constant spraying, frequent fertilizing, and pruning—and they can inflict pain with their thorns. This remains my opinion of the commonly grown hybrid tea group—the roses that produce beautiful cut flowers



Margaret Mulligan

J. Roger

Mary Rae Mattix

(Opposite) Rosa *'Kathleen' climbing over the Tea House at Lakewold Gardens.*

Upper to lower photos (left): Rosa moyesii *var.* fargesii *hips, fruiting;* Rosa *'Mermaid', and* Rosa glauca.

on plants so unsightly that a whole division of garden design has developed to contrive settings in which to veil their awkwardness.

It has been my pleasure to discover that there are roses that need not be sequestered in the rose garden. Many of the wild species and a large number of both old and new hybrids are capable of performing admirable landscape roles, and many require no more maintenance than a rhododendron.

Convincing examples of rose suitability are as near as Mrs. Corydon Wagner's Tacoma garden, Lakewold, recently donated to a non-profit organization for preservation and public access. (See article by Scot Medbury, this issue). An unusually tall *Rosa* 'Kathleen' runs up and over the Tea House to give the formal garden's focal point a graceful mantle of foliage from April through November. Toward the end of spring, clusters of fragrant blush-white flowers furnish a dense canopy, without altering the shape and proportions of the structure that they decorate. After this main crop, a scattering of these giant ''apple blossoms'' appears throughout the summer, joined by the ripening orange hips at the approach of fall. The casual scrambling habit of 'Kathleen', as well as that of many wild roses, yields a plant well suited to draping over buildings, trees, and boulders and down slopes.

This same characteristic of vigorous and pliable growth makes roses likely candidates for training on walls. On the east-facing kitchen wall at Lakewold, the nineteenth century hybrid 'Sombreuil' softens the masonry while maintaining a flat backdrop for the intricate design of the Knot Garden. The thick plaster of ivory-cream flowers in June spreads up to the second-story windows, perfuming both house and garden.

A blank, south-facing wall of the garage provides an ideal site for *'Mermaid', a none-too-hardy hybrid of the southern Chinese **Rosa bracteata*. The rampant shoots readily create an espalier fan, some ten feet tall and twice as wide, with year-round lustrous deep green leaves and elegant summer-long yellow flowers. With its great vigor, 'Mermaid' can re-cover the wall within a year, if killed to the ground during a severe winter. But it also requires monthly pruning of viciously thorny growth throughout the summer. It does not like to be pruned after a certain age.

Other roses, especially some of the species, possess ornamental characteristics that earn them a place in the less formal areas at Lakewold and in a traditionally no-rose garden such as my own. In regions such as the Northwest, where autumn color is not naturally abundant, **Rosa virginiana* is a good choice for brilliant orange-red-purple leaf color that appears after the summer display of simple rose-pink flowers. It is a bad choice, however, unless there is plenty of space for its freely suckering habit. **Rosa glauca* (syn. *R. rubrifolia*) easily reaches overhead with a fountain of upright shoots. The leaves begin deep crimson, then mature to soft glaucous blue to provide a striking color effect. The typical pink flowers and later display of deep red hips are unexpected dividends.

As the wild rose with the showiest display of fruit, *Rosa moyesii* combines the spectacle of two-inch long red hips in the fall, with brilliant scarlet (or pink) flowers in early summer and fine-textured foliage throughout the growing season. This Chinese species readily pushes to ten feet tall, but the selection *'Geranium' retains the best of flower and fruit color while remaining several feet shorter. 'Geranium' was selected in 1936 by Brian O. Mulligan when he was assistant director of the Royal Horticultural Society's garden at Wisley. **Rosa roxburghii* catches the eye with fruit not particularly colorful, but sinister in its prickly coat. Aside from this peculiarity, it offers fragrant pink flowers and peeling bark on the older stems to produce a smooth pale surface.

Disease-resistant foliage; charming, simple flowers; and distinctive plant habit make many of nature's roses good candidates for the landscape. If you are one of those people who proudly states ''I don't own a rose!'', there probably is at least one place in your garden that does not have the best plant for the site.

Limited numbers of plants can be propagated by the Arboretum Foundation for members.

Kendall Gambrill of British Gardens, a design and consulting business, is a member of the *Washington Park Arboretum Bulletin* editorial board.

Whitie Marten, courtesy of CUH

Viburnum opulus *'Roseum' with fertile florets and sterile flower (right).*

Wayfarers, Doublefiles, and Withe-Rods

by Daniel Hinkley

All of the following deciduous Viburnum *can be found in the Washington Park Arboretum, except for the one noted.*

The she-goat, Caprea—having twisted horns that superficially resembled the twisted petioles of honeysuckle leaves—unknowingly gave her name to the honeysuckle family. The Caprifoliaceae is composed of a cohesive group of genera which can be found on every continent, except Antarctica. A roster of its members includes an impressive list of hardy ornamental shrubs familiar to even the novice gardener: *Abelia*, *Lonicera*, *Sambucus*, *Leycesteria*, *Diervilla*, *Dipelta*, *Weigela*, and *Viburnum*.

The genus *Viburnum*, with over 250 species found in North and South America, Europe, and Asia, outshines its brethren in ornamental versatility. The Latin name of the genus *Viburnum* is believed to be derived from *vieo* meaning "to tie," due to the flexible nature of the stems of many species. As a whole, it offers merits of beauty and fragrance of flowers, autumn coloration, striking fruit, and graceful habit. Unfortunately, the prototype species that unites all of these virtues does not exist. For two decades, the National Arboretum has attempted to combine the best of several species.

To date, many cultivars and hybrids, all named for native American tribal cultures, have been released with many improvements. Within the genus, however, are eight taxonomic sections with different chromosome numbers. It is due to this incompatibility that many potential crosses cannot succeed and, therefore, it is unlikely that the perfect *Viburnum* is close at hand.

The Pacific Northwest is poor in members of the Caprifoliaceae as a whole. Thus, although there are 22 species of *Viburnum* in the United States and Canada, here there are only three or four species of *Viburnum*: *V. opulus* var. *trilobum*, *V. edule*, and *V. ellipticum*.

When hiking in Southeast Alaska, I found *Viburnum edule* growing in dense thickets with large sets of striking red fruit. Its presence in the state of Washington has eluded me, yet it is considered to be quite common on the western slopes of the Cascades. *Viburnum opulus* var. *trilobum* extends its eastern range into the Columbia River Gorge, whereas *V. ellipticum* is native to Oregon and Northern California.

Our mild maritime climate affords us the opportunity to grow a diverse sampling of *Viburnum*, though the evergreen species will commonly be en-

countered in our landscapes. Generally considered more tender in nature than the deciduous species, they often are regarded as being more garden-worthy with reference to form, texture, and fruit. Brian O. Mulligan, director emeritus of the Washington Park Arboretum, will continue the exploration of this genus and its evergreen members in his fall article.

The Deciduous *Viburnums*

The deciduous species of *Viburnum* are less well known in our gardens outside of a few exceptions. Let's examine these species, all of which are represented in the Arboretum collection, by exploring the attributes many species contribute to our gardens.

Winter-Flowering Species

Many of us have experienced brief moments of awe or beauty in our lives which long remain intact in our memories. During a walk in the Washington Park Arboretum shortly after my arrival in Seattle in 1980, I chanced upon *Viburnum farreri*, with fresh and fragrant flowers of blushed white. The weather, midwinter and dreary, gave no hints of an early spring. This encounter was the hope of spring incarnate and my spirits were lifted. I have been jaded by a decade of winter horticultural gifts in our mild climate, but I am still thankful for that encounter. My appreciation for this species is intact.

The most commonly available of the winter-bloomers is *Viburnum* x *bodnantense* which is a hybrid of *V. farreri* and *V. grandiflorum*. The cultivar 'Dawn', a rich pink, is the most frequently encountered, however I am partial to *V.* x *bodnantense* 'Deben', a clean white which more closely resembles its parents. *Viburnum* x *bodnantense* often will be in full blossom by Christmas in a mild year and can produce smatterings of flowers throughout the summer and autumn. It makes a stiff arching shrub up to 10′ in height, ideal for an entry planting where the flowers can be admired during the ''indoor'' months.

Viburnum farreri and *V. grandiflorum* are similar in appearance with white or pink flower-clusters, though not frequently encountered in nurseries. *Viburnum farreri* 'Nanum' is a charming plant which remains a dense compact shrub up to three feet high and flowers in mid-winter with soft pink-blushed flowers.

These winter-blooming *Viburnums* share a common pitfall. Their growth habit is awkward and thus magnified by improper pruning. Allot a generous amount of space when planting and prune on a regular basis by removing entire stems at ground level.

Fragrance

The flowers of all *Viburnums* have some degree of scent, though many possess a heavy, disagreeable odor which presumably invites its intended pollinator. *Viburnum carlesii* is, however, without comparison in the entire genus for fragrance. The foliage is a downy gray-green which can be used effectively in combination with other shrubs and perennials for contrast. In April and May, a rich spicy bouquet from the waxy pink blossoms of *V. carlesii* pervades the garden air. This fragrance is the reason that *V. carlesii* was used as a parent to both *V.* x *burkwoodii* and *V.* x *carlcephalum*.

Flowers

The genus *Viburnum* is held together by opposite leaf arrangement as well as compound flowers which are arranged as umbels (flat-topped inflorescences in which the stems of the flowers arise from the same point), or corymbs (short and broad inflorescences in which the outermost flowers open first). In some *Viburnum* species, a row of outside florets has been sacrificed for the common good of the whole with their sexual parts transformed into large showy bracts. These sterile florets surrounding the flowers function as the entomological billboard advertising fast-food to the traveling pollinator. The most ornamental and best known of this flower type is *Viburnum plicatum* var. *tomentosum*, commonly called the ''doublefile.'' The lace-like flowers are borne in pairs along the branches which grow in a tiered and horizontal

Brian Mulligan

Inflorescence of Viburnum macrocephalum *'Sterile' at the Arboretum.*

Whitie Marten, courtesy of CUH

Viburnum plicatum *var.* tomentosum *group along Lake Washington Boulevard.*

habit. In mid to late May, when in full blossom, there are few more beautiful ornamental shrubs than this variety. The cultivar 'Mariesii' has larger flowers and a more compact growth habit, and 'Summer Snowflake' (not yet in the Arboretum) blossoms continually from May through September; both have superseded the type variety.

In three species of *Viburnum*, aberrations of this curious floral design have resulted in plants of rich floral interest with flowers entirely composed of the sterile florets. An example is *V. macrocephalum* 'Sterile'. These are the ''snowballs'' of our gardens which are often confused with hydrangeas, another genus in which this phenomenon occurs. Undoubtedly, the best of these is *Viburnum plicatum* var. *plicatum* known commonly as the Japanese snowball. It is a splendid plant and far superior to the more frequently encountered common snowball, *V. opulus* 'Roseum'. Its foliage, dark bluish-green, is a perfect foil for the four-inch snowballs of clean and clear white which appear in June. Autumn brings striking hues of oranges and reds to its leaves. It is a small, elegant flowering shrub of first class and should be more widely planted in the Northwest.

Autumn Color

In addition to *Viburnum plicatum* and its cultivars, there are many *Viburnum* species which can be grown for their outstanding autumn coloration alone.

Viburnum dilatatum is a vigorous Asian species that will ultimately produce a shrub up to 8′ in height. It is considered remarkable for the number of pure white fertile flowers it produces each spring; however, these are heavily scented and quite unpleasant. The cultivar, *V. dilatatum* 'Iroquois' was selected not only for its floriferous nature and heavy fruit set, but for the orange to deep-red color of its leaves in autumn.

Considered to be one of the finest of American species, *Viburnum cassinoides*, commonly called the ''withe-rod,'' colors nicely in the woodland garden section of the Arboretum every autumn. Its common name refers to the use of its flexible stems as withes to tie fences during early American and Canadian history. The leaves emerge in the spring with a bronze tint and become brilliant red and orange before they fall.

Fruit Effects

Many *Viburnums* produce crops of colorful, persistent fruit which add considerable interest to our autumn landscapes. The fruit of a few species, including *V. opulus* var. *trilobum*, are edible and

have long been used for making jellies and preserves. Many of the fruit-bearing species and cultivars attract birds, though the ornamental crop is sacrificed to the feathered friends. For optimum fruiting habit, at least two seedlings or different clones of the same species should be planted for adequate cross-pollination.

A few species that normally produce crops of attractive red fruit have yellow-fruited cultivars. *Viburnum opulus* 'Xanthocarpum' is represented in the Arboretum collections and produces large clusters of rich yellow fruit with the same general habit of the species. This cultivar—planted in combination with *Callicarpa bodinieri* var. *giraldii*, which has deep lavender fruit—produces a striking effect.

The Asiatic *Viburnum setigerum* 'Aurantiacum' has crops of glowing reddish-orange fruit which are conspicuous from a great distance. The growth habit of this species is somewhat sparse and leggy, however; it should be planted in mass rather than as a sole specimen.

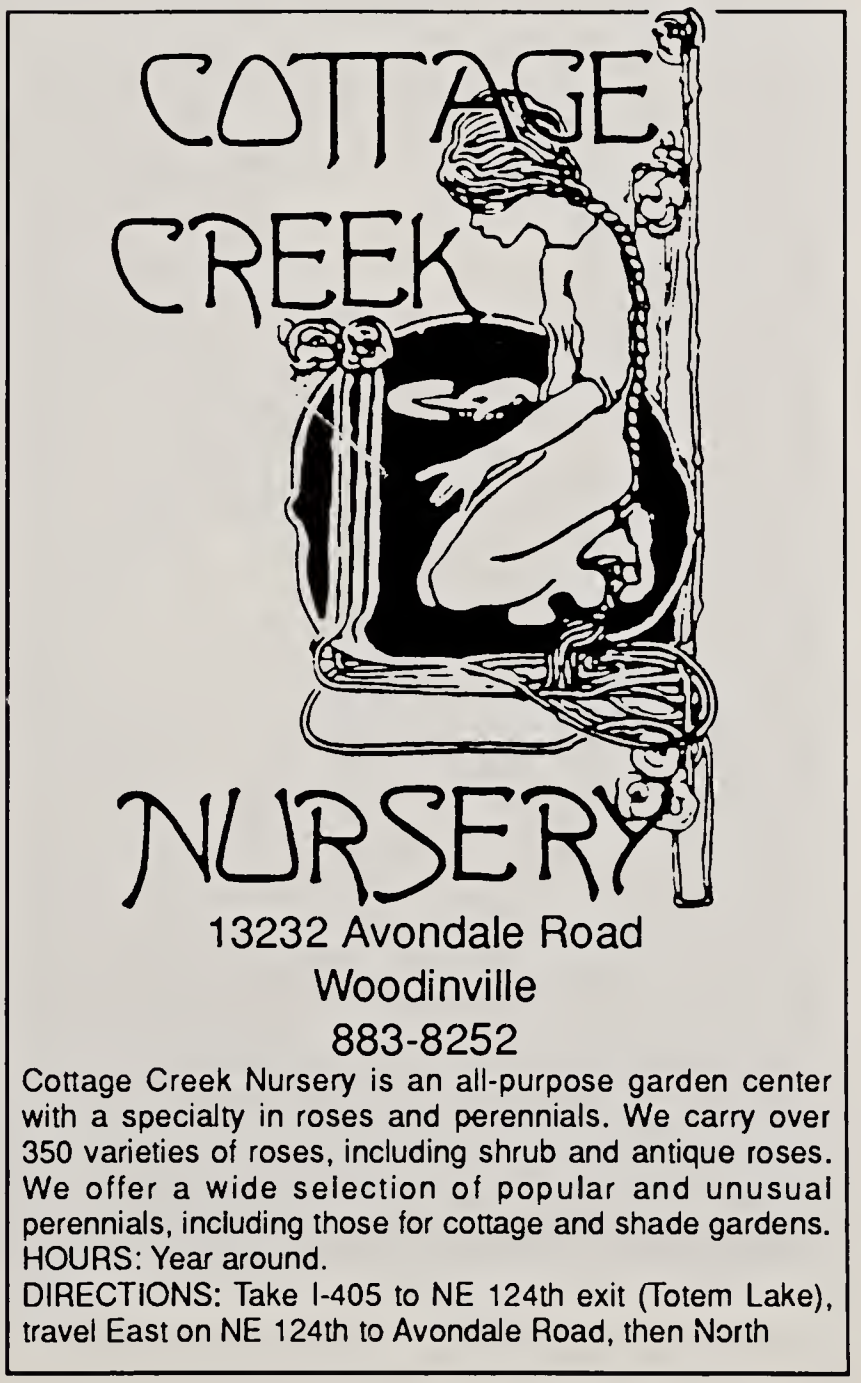
The fruit of several species progresses through a spectrum of colors during its ripening process. *Viburnum cassinoides*, mentioned earlier for outstanding autumn color, bears fruit which progresses through green, yellow, red, and finally blue-black. The fruits ripen independently from one another, so a kaleidoscope of colors can be represented on the shrub at one time, producing a colorful display in combination with the turning foliage.

A selection of the European wayfaring tree, *Viburnum lantana* 'Mohican' produces large crops of red fruit which remain colorful throughout September and October, finally fading to a deep blue-black.

Versatile and appealing in many regards, the deciduous *Viburnums* are overlooked by many horticulturists in the Pacific Northwest. Whether planting the mixed shrubbery border, enhancing bird habitat, selecting a backdrop for the perennial border, or creating foundation and accent plantings near or around the home, consider the remarkable diversity and multifaceted virtues this group of plants possesses.

Brian Mulligan's article on evergreen *Viburnum* will appear in the fall issue.

Daniel Hinkley is a full-time educator of horticulture at Edmonds Community College north of Seattle, and a member of the *Washington Park Arboretum Bulletin* editorial board.



Fothergilla in Your Garden

by Mary Booth

You can see Fothergilla *and its companion plants in the Washington Park Arboretum before selecting the right species for your garden.*

The spring flowering season in Pacific Northwest gardens is a delightful and lengthy affair. By the month of May, the profusion of blooms from rhododendrons, azaleas, and other flowering shrubs and trees can result in sensory overload.

A quiet corner in the garden can be very welcome. An interesting candidate for this area is the white-flowering shrub *Fothergilla*, which blooms by late April or early May in Seattle. The flower looks like an upright bottle brush and is more unique than it is beautiful. With the arrival of autumn, however, *Fothergilla* sheds its quiet nature and puts on quite a show. The foliage turns glowing orange to red.

The Two Available Species

Two species of *Fothergilla* are available in the nursery trade. The size of your planting area and scale of your existing plants will determine which species you choose.

The larger species is *Fothergilla major* which grows slowly to a height of 10′ with a 6′ to 8′ spread. *Fothergilla monticola* often is listed as a separate species in nursery catalogs, but is correctly classified as *F. major*.

For a small planting area, select *Fothergilla gardenii*, a lower-growing shrub whose mature size is four feet high, but less in width.

Companion Shrubs

Fothergilla is a member of the Hamamelidaceae family, and other members of this family are some of its best companion plants. Provide visual balance (relief) and a longer season of interest by selecting

Don Normark, courtesy of CUH

Fothergilla major

shrubs that are winter-blooming; in spring, they display unobtrusive foliage at a time when the rest of the garden may be in full flower.

A good companion plant to the larger *Fothergilla major* is witch-hazel (*Hamamelis*), which has fragrant flowers in January and February. You may want to select the witch-hazel based on its fall foliage color, rather then its flower color. For example, select the witch-hazel cultivar 'Diane' (*Hamamelis* x *intermedia* 'Diane') with its red fall foliage if you want to match the color of the *Fothergilla* foliage. Select Chinese witch-hazel (*Hamamelis mollis*) for its clear yellow fall foliage if you want a contrast to the *Fothergilla* foliage. In the summer, the large foliage of all these shrubs looks almost identical.

If you use the smaller *Fothergilla gardenii* in your garden, combine it with buttercup winter hazel (*Corylopsis pauciflora*), a late winter-blooming shrub. This graceful plant has pale yellow flowers and clear yellow-to-apricot fall foliage color. It grows slowly to a height of 4′ with a 6 to 8′ spread. If there is room for one more shrub, add the taller growing (to 10′) *Disanthus cercidifolius* to this group. It is not well known, but contributes attractive foliage and beautiful fall color that includes shades of orange, red, and maroon.

Care

Fothergillas are native to the southeastern United States. In the Pacific Northwest, give them full sun or partial shade. They prefer moderate moisture through the summer and acid soil similar to what you would provide for camellias and rhododendrons.

View Them in the Washington Park Arboretum

These plants may be observed in the Hamamelidaceae (witch-hazel) section of the Arboretum. From the first southerly parking area on Arboretum Drive East, walk to the south. The *Disanthus* also is in this area, but is set back from the road, closer to the boundary fence. The witch-hazels are to the north of this parking area, or can be seen as you enter (from the north) the newly renovated Joseph A. Witt Winter Garden. Buttercup winter-hazel also can be observed at the Winter Garden.

Mary Booth is a landscape architect. She is chair of the Seattle Design Commission and a member of the *Washington Park Arboretum Bulletin* editorial board. Mary volunteers at the Center for Urban Horticulture and for The Arboretum Foundation.

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The Vanishing Legacy of Edmond S. Meany: A Tour of What's Left

by Duane Dietz

Take a historic tree tour on the University of Washington campus.

Degree of difficulty: Medium. The return walk has a gradual incline. University of Washington trees are not always labeled, so a tree identification book will be helpful for identifying trees at the end of the walk.

Time: Thirty to forty-five minutes

Best time of year: Of historical interest in all seasons, although late March allows a look at cherry blossoms along the way. Tree leaf may be necessary for identification.

Parking: Park your car in Lot N1 of the University of Washington near the Burke Museum. If coming by bus and entering from N.E. 42nd & 15th N.E., select the north path, heading east. If starting from the N.E. 45th entrance to the University, head south; you'll already be on "number 1," the sycamore-lined Memorial Way.

Buses: Any buses that travel through the University District along 15th Avenue N.E., University Way N.E., or N.E. 45th will provide easy access to campus.

To get back to your car: See the diagram.

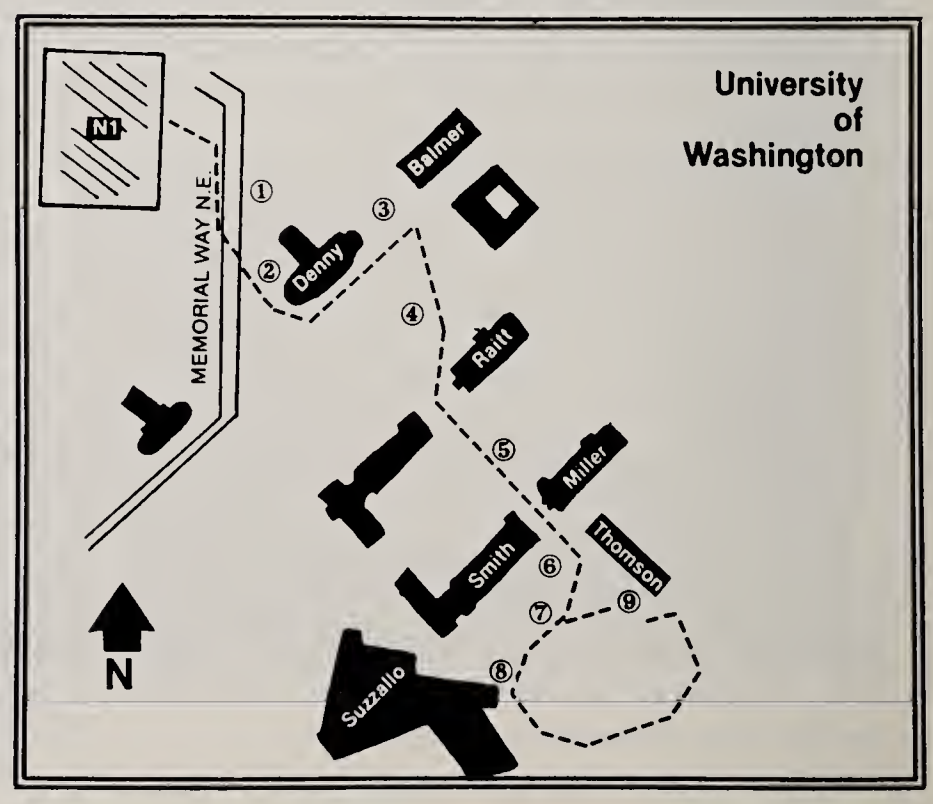
Professor Edmond S. Meany, later known as the "Grand Old Man on Campus," taught history when the University of Washington (UW) moved to its present location in 1895. He believed in teaching the natural history of the Northwest and in 1896 created a two-semester class relating to forestry in Washington State.

Meany established a seed exchange in 1903 with other institutions from around the world. His home, at the time, was one block northwest of the present Meany Tower Hotel and several blocks north of existing water mains. According to one story, each day he and his forestry students carried buckets of water to keep new tree seedlings alive in his nursery. When the seedlings were strong enough, Professor Meany and his class would transplant them onto what he referred to as his "University Grounds and Arboretum."

Professor Meany taught forestry classes until the College of Forestry was created in 1907. He still is regarded as the "father of forestry" at the University of Washington. Meany also was one of the driving forces in establishing the tradition of a park-like campus and in forming the present Washington Park Arboretum. Yet, his return to teaching history in 1907 brought a flagging interest in trees until a trip to St. Helena in 1920.

Coming back from the trip, Meany successfully smuggled past U.S. Customs a slip of a weeping willow tree (*Salix babylonica*) growing next to Napoleon's grave. He planted it in the dampest spot he could find on campus where—at that time—a small stream flowed by the Fisheries Center, located south of Pacific Street.

Professor Lauren Donaldson of the Fisheries Department was upset by the continual shedding of willow leaves into his fisheries pond and complained



about it. Professor Donaldson recounts: ''Professor Meany gave me quite a lecture on how young people just didn't appreciate the historical and traditional things of life.'' The willow stayed and Professor Donaldson insured its survival during the demolition of the old Fisheries building in 1974. Eventually, the tree was destroyed by the construction of the Triangle Parking Garage on lower campus.

There are still some Meany trees left on the University of Washington campus. Start your tour with the sycamore trees that line Memorial Way, leading in from the N.E. 45th Street entrance (at 17th Avenue N.E.).

1. ***Platanus*** x ***acerifolia*** (sycamore or London plane tree)

When you drive or walk down the north entrance of campus on Memorial Way, you will see two rows of majestic sycamores or plane trees (*Platanus* x *acerifolia*). Planting began on Armistice Day of 1920 with 58 sycamores, one for each of the 57 UW men and one UW woman who died in World War I. Professor Meany added six more sycamores in 1922 and another five in 1925, completing one portion of a proposed Olmsted design.

As you study the sycamores, notice that recent pruning has opened up the canopy to expose the strong branching patterns and flaking bark that are characteristic of these trees.

2. ***Quercus macrocarpa*** (bur oak)

At the northwest corner of Denny Hall, find the bur oak. This tall specimen, planted in 1925, was the final Armistice Day planting that Professor Meany made. It is native to the eastern United States and Canada.

3. ***Acer macrophyllum*** (bigleaf maple)

Continue your walk east and around to the front of Denny Hall. Looking east, toward Balmer Hall, see the bigleaf maple. Although native to this area, it was one of Professor Meany's favorite trees. This one was planted in November 1923 as another Armistice Day planting.

4. ***Araucaria araucana*** (monkey puzzle tree)

From slightly east of Denny Hall, start walking south towards the Liberal Arts Quadrangle (''The Quad'') and, on the right, notice one of the most bizarre trees on campus. Although two specimens of *Araucaria araucana* originally were planted here on Armistice Day, 1921, only one survives today. It was a popular landscape plant in Seattle in the 1920s. When you take a closer look at the foliage, see the overlapping scales that are up to two inches long. The scaly branches look relatively harmless, but are very uncomfortable to grasp. This tree is native to Chile, but large specimens also can be found around older homes on Capitol Hill and Queen Anne Hill.

5. ***Prunus*** x ***yedoensis*** ('Yoshino' cherries)

Continue down the walkway, between Savery and Raitt halls, to the Quad. There you will see the 'Yoshino' cherry trees. They are not Meany trees, but are beautiful in late March when thousands of cherry blossoms create a ''pink snowfall.'' These trees, as well as many other plantings, were removed from the Highway 520 construction area south of the Museum of History and Industry, then

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Professor Edmond Meany, 1906, in front of Denny Hall.

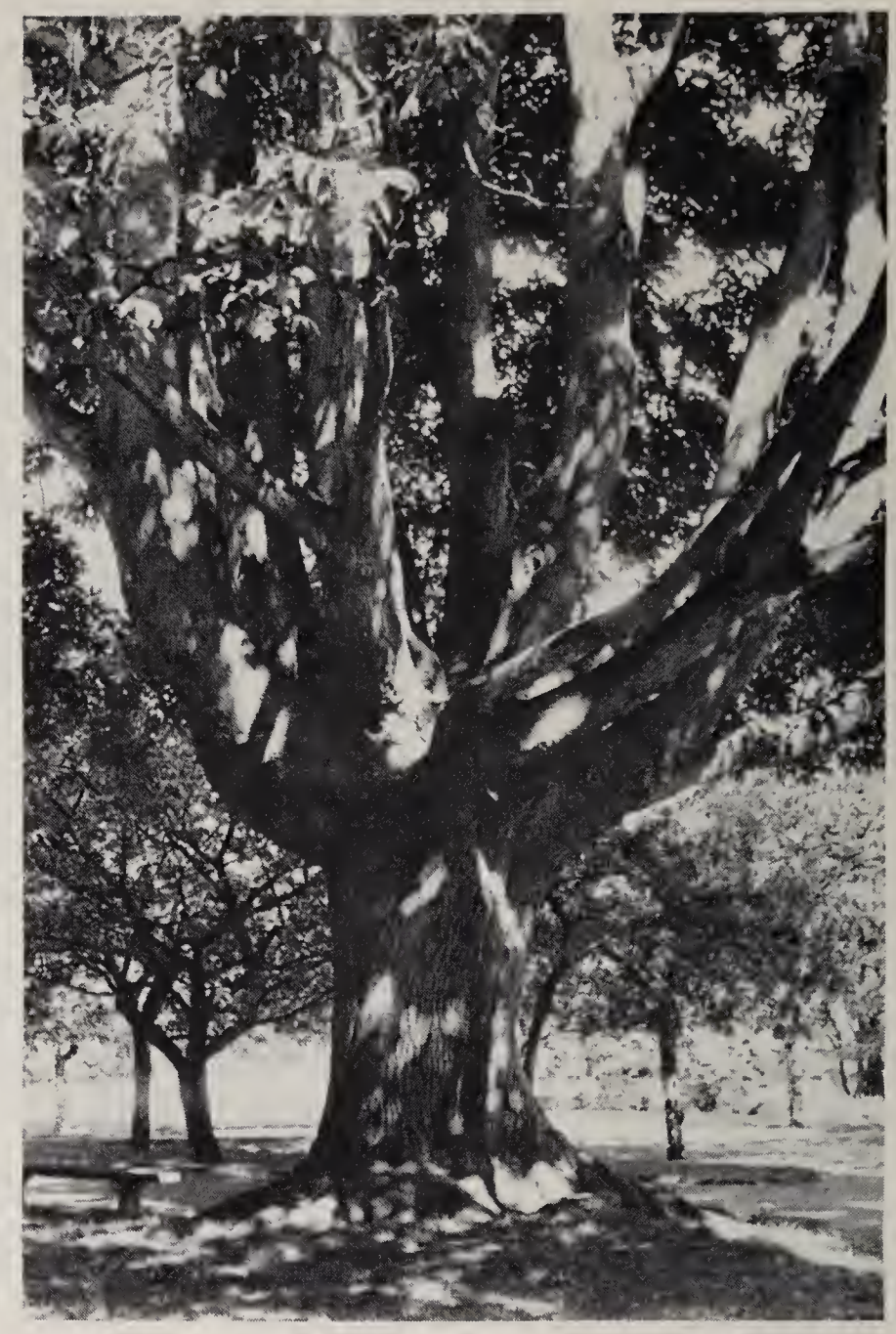
installed on campus by Eric Hoyt, campus landscape architect from 1960 to 1987.

6. ***Sequoiadendron giganteum*** (giant sequoia)

Exit from the Quad, south, between Smith and Miller halls. The giant sequoia is to your right on the southeast side of Smith. Over the centuries, these trees will grow upwards of 275′. This seedling, grown from Meany's yard, is about 90′ tall with a girth of 11′. It was planted here in 1906 to celebrate the opening of the Alaska-Yukon-Pacific Exposition.

The Grieg Garden and the International Grove

Looking south from the sequoia, you see the newly developed Grieg Garden, so-named for the pedestal and bust of the composer which are near its center. This area contains the last of the major Meany plantings. Twenty-nine consuls, representing 35 countries, gathered to plant trees celebrating the bicentennial of George Washington's birth. Professor Meany selected the trees; however, the Department of Agriculture would not allow the import of any tree material originating south of Mexico. Thus, the Central and South American consuls were compelled to plant northern red oaks (*Quercus rubra*).



(Top) Acer macrophyllum. *(Above) Branch of* Araucaria araucana. *Photos by Jan Pirzio-Biroli. (Inset) On the far left of Denny Hall see branches of the* Araucaria*; on the far right,* Acer macrophyllum.

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Denny Hall in the late 1930s. The Acer macrophyllum *(closest to right of building) is much larger now.*

Of the trees which are standing now, only 14 bicentennial trees remain. Three were removed for the 1963 library expansion and another 12 eliminated by the latest Suzzallo addition.

7. ***Cedrus atlantica*** 'Glauca' (Blue Atlas cedar)

About 150′ southwest of the Grieg statue, near the tower of the new Allen library addition, is the large blue-green form of the Atlas cedar. Although native to North Africa, it was planted by the Greek consul.

8. ***Quercus rubra*** (northern red oak), ***Fagus sylvatica*** (European beech), and ***Ostrya carpinifolia*** (European hop hornbeam)

West from the Grieg statue toward the library addition are the fine red oaks planted by the Latin American consuls. Among these oaks is a specimen of European hop hornbeam with its ''saggy skin'' appearance and a leaf like a true hornbeam.

9. ***Acer saccharum*** (sugar maple) and ***Picea pungens*** 'Koster' (Koster's blue spruce)

Nearby are two other trees of interest, about 50′ east of the Grieg statue, near Thomson Hall. The maple is one of the few survivors of the Governor's Grove Planting destroyed by the building of Thomson Hall. Find them between the Grieg bust and the southwest end of Thomson. The Koster's blue spruce is worth noting due to its unique compact growing habit. It is just to the north of the *Acer saccharum*.

Professor Edmond Meany was responsible for the planting of approximately 2,900 trees during his 40+ year stay on campus. The trees on this tour are the only ones left that can be directly attributed to him. Between 1930 and 1960, the loss of historic trees on this campus was minimal. The postwar construction boom has eroded the legacy of our past. Additional new construction is planned for the 1990s. Although none of it should affect the lives of Professor Meany's historic trees, it may effectively destroy the ''arboretum'' atmosphere that we have all come to take for granted on the University of Washington campus.

Thanks to Bill Talley, campus landscape architect, for his help on this tree tour.

Duane Dietz is a graduate student in the University of Washington Department of Landscape Architecture.

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Plants of Winter Rain Regions V: Woody Evergreens of the Pacific Northwest— West of the Cascade Crest

by Jan Pirzio-Biroli

The Pacific Northwest is defined by C. Leo Hitchcock as comprising northern Oregon, all of Washington State, Idaho north of the Snake River plains, the mountains of western Montana, and southern British Columbia. In the fifth of our series on winter-rain regions, we refer specifically to western Oregon and Washington to the crest of the Cascade Mountains. All the species discussed are in the Washington Park Arboretum, except the one noted.

In the Pacific Northwest, it is generally accepted that our rain begins in early autumn, building to a virtual downpour by January. The rains taper off until the end of June when we can begin to count on two months of nearly continuous drought, although July and August often are overcast. Ours is a cold winter-rain, or cool Mediterranean climate, which resembles those of other regions we have discussed, except for the lower temperatures that prevail. (See other articles in this series: 49(3):8-11, winter-rain vegetation; 50(1):2-9, the Mediterranean region; 50(4):10-13, California; and 51(3): 18-22, Chile).

The plants that grow in those parts of the world are well adapted to our pattern of moisture and drought, and some have an even wider range of hardiness than might be expected from their natural habitat. For example, the Washington Park Arboretum's specimens of *Cedrus brevifolia*, which is endemic to the island of Cyprus, suffered no damage whatsoever from the devastating cold winters of the 1980s. In contrast, many species of *Cistus*, which we plant (and replant) in the Arboretum's Mediterranean Section, are killed in the first serious cold spell that occurs after they have been set out.

Don Normark, courtesy of CUH

Holding a small cone containing the winged seed of Calocedrus decurrens *(incense cedar).*

If you wish to grow these plants, you have three alternatives:

1. think of them as quasi-temporary plantings to be renewed as we renew any annual or short-lived perennial;
2. give them a sheltered position, possibly with reflected heat from a south wall; or
3. seek wild-collected sources in the coldest parts of their range.

The third alternative offers the best hope for establishment of such desirable exotics. For example, to grow the Chilean species *Embothrium coccineum* (Chilean firebush) or *Drimys winteri* (winter's bark), we would be well advised to seek seed sources in the Andes or from the highest latitudes in which they persist in their native range.

The moisture regime of western Washington and Oregon is a northern extension of California's warm Mediterranean climate. Prevailing west winds bring rains from the Pacific to the Siskiyou and Olympic mountains, and to the Coast Range between them. Although the Puget Sound area of western Washington and the interior valleys of

Oregon (Willamette, Rogue, and Umpqua) stand in the rain shadow of those coastal highlands, they still experience a pattern of winter rains and summer drought. When selecting one species that typifies the vegetation of this region, madrona (*Arbutus menziesii*) is an obvious choice. It is so well acclimated to our patterns of rainfall that a 50-year-old tree can be killed in just a few years by subjecting it to the heavy summer irrigation that is practiced by Pacific Northwest gardeners.

Familiar trees that grow throughout the region are western hemlock (*Tsuga heterophylla*), Douglas-fir (*Pseudotsuga menziesii*) and bigleaf maple (*Acer macrophyllum*). Western white pine (*Pinus monticola*) and lodgepole or shore pine (*P. contorta*) occur in more restricted habitats throughout the region. Surprisingly, *P. ponderosa*, which we know so well from eastern Washington, crosses the mountains to become a significant component of the mixed evergreen forests in the drier locations of southwestern Oregon and within Ft. Lewis on the Tacoma prairie.

The deciduous Oregon white oak (*Quercus garryana*), grows in selected localities throughout the region. Find it in the Siskiyous, in the Willamette Valley, and in dry locations around the Puget Sound, such as the Tacoma prairie, as well as in the San Juan islands and on Vancouver Island.

Two species of *Rhododendron* inhabit western Oregon and Washington. In southwest Oregon, the beautiful deciduous *R. occidentale* has an extensive color range and varying flower form. Where it grows northward along the coast, it coincides with the evergreen, pink-flowered *R. macrophyllum*, whose range extends into the lowlands of British Columbia.

Although the woody flora of the Pacific Northwest is considered to be numerically limited in comparison with those of other areas of the world, a number of exceptionally fine evergreen woody plants are native to the winter-rain regions of Oregon and Washington. Some of them are the shrubs that typically dominate the drier habitats of southwest Oregon, namely *sclerophyllous* plants adapted to the chaparral, which extends into Oregon from California. Others have a wider distribution. Some of these species, especially those we see around us all the time, are not valued by us as they might be if they had been imported from more exotic localities. *Gaultheria shallon* (salal) and two species of Oregon grape (*Mahonia*) are so familiar that they need only a passing reference in the present context. These superb plants are widespread understory components of our winter-rain landscape, ranging more or less from British Columbia south through Oregon.

Broadleaved Evergreens

Lithocarpus densiflorus (tanbark oak) grows on the hillsides of southwest Oregon in mixed evergreen stands with Douglas-fir, *Chrysolepis chrysophylla* (not now in the Arboretum), and *Quercus chrysophylla*. *Lithocarpus* is like an oak except that its male catkins are upright on the branches, rather than pendulous as in the genus *Quercus*. It is a handsome tree whose leathery leaves are deeply impressed with parallel veins. Several specimens grow in the oak section of the Arboretum, one of them reaching about 30′ high.

Chrysolepis chrysophylla (syn. *Castanopsis*, commonly known as chinquapin) is a bushy tree in southwestern Oregon extending into a few localities on the Olympic Peninsula and southern Washington. Its close relative, *C. sempervirens*, has an even shrubbier habit in the Cascade mountains. These plants are so named because of the golden yellow, scaly pubescence on the underside of the leaves and on the spiny fruits which resemble the burrs of the closely related chestnut (*Chryso* = yellow; *lepis* = scale). With the contrast of dark green and yellow throughout, this is an extremely decorative plant. It is not easy to grow in Puget Sound gardens, but if you are a collector, either species is worth trying in well-drained soil and filtered sun—or even full sun, for the shrubby species.

Umbellularia californica (California bay laurel) grows from the Umpqua River southward, favoring river bottoms where it occurs in dense stands. A member of the laurel family, its softly shiny lance-shaped leaves have a pungent aroma, much stronger than that of its cousin, the true bay laurel (*Laurus nobilis*), from the Mediterranean regions of Europe. In the Mediterranean section of the Arboretum, *Umbellularia* becomes a forty foot tree, thriving at the edge of woodland or in the open. The leathery-skinned, one-inch drupes germinate readily beneath the trees where the soil is moist and shaded.

Brian O. Mulligan

Arbutus menziesii *(madrona tree) trunk in southwestern Oregon.*

Two species of *Garrya* (silk-tassel) are well known in Puget Sound gardens. The common name refers to the long, silky catkins which are produced in late winter. Those of male plants are longer and more decorative than those of the females. *Garrya elliptica* grows along coastal bluffs from southwestern Oregon into California. Two- to three-inch leaves have picturesque, wavy margins that lend considerable character to this large shrub. The smaller, more elegant *G. fremontii*, with glossy, ovate leaves, is the upland species, extending its range into the west Cascades of Washington. Where they grow together in gardens, the two species have produced a series of hybrids that have been named *G.* x *issaquahensis*.

Arctostaphylos columbiana (hairy manzanita) is a northern representative of the (mainly) Californian manzanitas. It grows in small stands along the coast and inland to the west slopes of the Cascades from Oregon to British Columbia. Its gray, pubescent foliage contrasts handsomely with the reddish-brown bark of mature stems. Clusters of urn-shaped (urceolate) flowers so typical of many members of the Ericaceae are produced at the branch tips. Where the hairy manzanita grows with kinnikinnick (*A. uva-ursi*), intermediate forms can occur which are aptly named *A.* x *media*.

Vaccinium ovatum (California huckleberry), another ericad, occurs frequently in the Olympics, in lowland areas inland and along the coast from British Columbia to northwest California. Although it does not grow natively in the Seattle area, *V. ovatum* is well represented in our gardens. It is favored for its tidy habit and the elegant arrangement of small, shining leaves, as well as for the clusters of urceolate flowers and delicious black fruits. Where it grows in native stands around the Puget Sound, the florist trade harvests it frequently and—unfortunately— voraciously.

Ledum (Labrador tea) is restricted to bogs and seeps along the coast and inland to the Cascades. Two species have separate ranges except where they meet on the Long Beach Peninsula of southwestern Washington. *Ledum glandulosum* var. *columbianum* is the southern entity from northern California and Oregon, whereas *L. groenlandicum* has a circumboreal range across Canada and Eurasia. These low plants have one- to two-inch lanceolate leaves with strongly incurved margins. The wrinkled leaves of *L. groenlandicum* bear a handsome reddish-brown indumentum on their undersides, reminiscent of that of some rhododendrons. Small white flowers are densely packed at the branch tips. They prefer moist soil in your garden, but stand up very well to summer drought.

Myrica californica (Pacific wax myrtle) grows along the coast, preferring sandy dunes. It is a relatively narrow shrub with upright branches and somewhat thin lanceolate leaves that have noticeably toothed margins. The flowers and fruits are inconspicuous, but you will find it to be valuable as a hedging plant with a wide tolerance for climate and exposure.

Paxistima myrsinites (syn. *Pachistima*, commonly known as mountain box) occurs on the forest floor as far north as British Columbia and southward into California. It deserves a much wider use in our gardens for the graceful spread of its slender branches, lined with one-inch leaves arranged in pairs. Its minute flowers are produced in the leaf axils in such abundance that the plant in bloom takes on a reddish sheen. This is another maintenance-free plant, well adapted to summer drought. Once established, it persists in the landscape. If you provide enough room, it will spread under a garden

Brian O. Mulligan

Garrya elliptica *'James Roof' inflorescences*

Courtesy of CUH

A flowering branch of Umbellularia californica *inset into a grouping.*

canopy to as much as six feet across, although it is rarely seen with this habit in its native range.

Two Coniferous Species

Calocedrus decurrens (incense cedar), an important component of the southern Oregon and northern California flora, flourishes in the summer-dry climate of southwestern Oregon and as far north as Mt. Hood. This is a tall, narrow tree with scaly foliage on erect, fan-like branchlets. It is fully hardy in the Arboretum and deserves to be more widely used by gardeners in its narrower forms.

Chamaecyparis lawsoniana (Port Orford cedar, Lawson cypress) has a limited range along the coast and in the coastal mountains of southwestern Oregon and northwestern California, but it is widely exploited in the nursery trade throughout the world. Because the numerous cultivars vary widely in foliage color and form, they are readily adapted to various landscape purposes. The Arboretum has a planting of several cultivars in a grove (south of the Mediterranean Section). Selections range from typical ones that have upright, glaucous foliage, to others with greener, more heavily textured branching patterns. Port Orford cedar's preference for a dry site must not be overlooked because it is prone to serious root fungus disease which can wipe out an entire planting once it has infected a single plant.

The woody, evergreen flora of the Pacific Northwest is well adapted to the cool Mediterranean climate that we have discussed. Take a look at such species because they are successful in the summer drought that is typical of the Puget Sound area. In these days of water conservation, they offer an alternative to the heavy irrigation to which we have become accustomed but that we may have to forego—or at least reduce—in the near future.

For Further Reading

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Jan Pirzio-Biroli is Naturalist at the Washington Park Arboretum. She has a master's degree in botany (taxonomy) and was editor of the *Bulletin* from 1976-1980.

Fruiting branches of Sorbus gracilis *in the Washington Park Arboretum.*

Mountain Ashes (*Sorbus*) in the Washington Park Arboretum

by Brian O. Mulligan
Photos by the author

The first plantings of Sorbus *were made in 1949 and 1950 in the Arboretum. In June 1990, the Brian O. Mulligan* Sorbus *Collection will be dedicated in honor of the director emeritus.*

Thirty-six species of *Sorbus* from various regions of the temperate world grow in the Arboretum. With them are three botanical varieties, one forma (of *S. aria*), and three cultivars of this same species—the whitebeam tree of Europe. In addition, there are seven hybrids from several sources, chiefly the Netherlands. Together, the collection has 50 different taxa (or kinds). All—except two still in the nursery—have been growing in the Arboretum for many years.

SOURCES

Seeds

Most of the Arboretum's *Sorbus* were raised from seeds received from many arboreta and botanical gardens, mostly in Europe and including the Royal Botanical Gardens at Kew, London, and Edinburgh. Some also came from nurseries or private gardens in England, including Windsor Great Park, Hillier's Nursery at Winchester, and W.J. Marchant Nursery at Wimborne, Dorset.

Other seeds were from Copenhagen, Denmark; Gothenburg, Sweden; Essen, in West Germany; Wageningen in the Netherlands; Poznan, Poland; Brno, Czechoslovakia; and Zagreb, Yugoslavia. Our Asian examples are from Kyoto and Kobe, Japan; luckily, in 1948, we got one from a nursery in Shanghai, China. Among the North American sources were the United States National Arboretum at Washington, D.C., the Morton Arboretum in Lisle, Illinois, the Arnold Arboretum in Jamaica Plain, Massachusetts, and the U.S. Department of Agriculture at Beltsville, Maryland.

Plants

Plants were obtained from comparatively few sources. The four Dutch hybrids listed in the Arboretum catalog of 1977 came from a nursery in Ohio in 1967; *Sorbus megalocarpa*, *S. tianshanica*, and the hybrid 'Wilfrid Fox' were from the Hillier Nursery in England. E.H. Scanlon's nursery in Ohio supplied our *S. aria* 'Majestica', and scions of the clone 'Lutescens' came from the University of British Columbia Botanic Garden at Vancouver, British Columbia (or the campus there).

Wild

The only plants raised or obtained from known wild sources are *Sorbus aria*, from southern England; *S. cuspidata*, from two locations in the

Fruits of Sorbus cashmiriana.

Himalayas; *S. intermedia*, from Sweden; *S. lanata*, from Nepal; *S. sambucifolia*, from the northeastern U.S.S.R.; and *S. scopulina*, from both Washington State and Wyoming.

Some other species also may have been collected as seeds in the wild state, but we do not have information to support such speculation. Amongst them might be *Sorbus folgneri* from China, and *S. gracilis* and *S. japonica* from Japan. Both *S. microphylla* and *S. forrestii* originally were raised at other institutions from seeds collected in China; we know their original collector's numbers and they are true to name.

A Need to Add Chinese Species

Several important species—all from China—are missing from the collection and it is hoped that they may all be added, perhaps from recent plant introductions from that country. The addition of *Sorbus discolor*, *S.prattii*, *S. scalaris*, *S. sargentiana*, and *S. thibetica* would make this collection even more representative of this genus than it is now.

Brian O. Mulligan is director emeritus of the Washington Park Arboretum. He helped revise *Trees and Shrubs for Northwest Gardens*, just published by Timber Press.

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Frederick W. Leissler, Jr. (1904 -1989)

by Scot Medbury

Frederick Leissler was one of the founding employees of the University of Washington Arboretum and a landscape architect of considerable talent. He was assistant director under Dean Hugo Winkenwerder, University of Washington College of Forestry, from 1935 to 1939. During this period, the Washington Park Arboretum was constructed.

Born in Lake Forest Park, north of Seattle, Leissler was a graduate of Seattle's Roosevelt High School. At Oregon State College (now University), he took a bachelor's degree in landscape architecture. While an undergraduate there, Leissler won a national award from the American Society of Landscape Architects for his Beaux Arts-inspired plan for a botanic garden. The plan depicted a monumentally scaled conservatory rising above an axially symmetric garden. It was modified in 1934 and submitted to the Seattle Parks Department as a proposal for the new arboretum to be built in Washington Park.

Working in a Washington, D.C., nursery, Leissler met David Fairchild and Joseph Rock, among other notable plantsmen of the time. The meeting led to a two-year stint in China as assistant to Scottish plant collector George Forrest. Before coming to the Arboretum, Leissler worked as a landscape architect for the Seattle Parks Department, designing planting plans for such familiar places as Seward and Lincoln Parks.

During the building of the Arboretum, he supervised a Work Projects Administration (WPA) labor force which at times exceeded 500 men. Leissler was well suited to assume supervision of the project, having already amassed a wealth of experience in his thirty-one years.

Leissler traveled twice to Boston on behalf of the University of Washington to consult with J.F. Dawson of the Olmsted Brothers, the landscape architectural firm eventually selected to design the Arboretum. In 1936, Dawson wrote to Dean Winkenwerder how impressed he was with Leissler's "enthusiasm and keenness to do the right thing." (The letter is in the Olmsted Associates records, Library of Congress.)

After leaving the Arboretum, Leissler went on to a career with the National Park Service. He served as Olympic National Park ranger and landscape architect from 1946-1956. He authored the much-reprinted *Roads and Trails of Olympic National Park*, published in 1957. Leissler's last position was as a landscape architect with the U.S. Bureau of Public Roads, where he helped with the "Keep America Beautiful" program during the Johnson Administration.

In 1948, Frederick W. Leissler, Jr., was a ranger and landscape architect with Olympic National Park.

Thanks to research supported by the Center for Urban Horticulture, in summer 1989 I had the opportunity to interview Fred Leissler in Genoa, Nevada, about his involvement with the infant arboretum. He was very interested to hear of current projects there, especially the renovation of Azalea Way, which he had helped to create. Fred said that he had "put his whole heart and soul into making the Arboretum a success" during Depression years.

He died several months after we spoke, on November 28. I only wish he could have returned to see some of the new improvements in the Arboretum.

Most landscape trees are native to forests where the ground is covered by a natural mulch of leaves in various states of decay. Therefore, it is not surprising that many shade trees are stunted when growing in lawns. Two factors appear to be responsible for this: (1) the lack of benefits accrued by a mulch, and (2) competition from the turf.

The benefits of organic mulches are well known. They reduce weed competition, increase infiltration of water into the soil, reduce evaporation of soil moisture, and buffer the root zone from temperature extremes. Mulches also add organic matter to the soil, thereby improving soil structure, water-holding capacity, and nutrient availability.

Grasses, on the other hand, aggressively compete for water and nutrients that might otherwise be available to the tree. In addition, some grasses appear to produce chemicals that can inhibit tree growth. Leachates from both the leaves and roots of fescue grass reduced the growth of young *Liquidambar* trees in one experiment.

Studies at the Morton Arboretum near Chicago showed that young sugar maples (*Acer saccharum*) achieved much better top growth and root densities when their root zones were covered with an organic mulch. After five years, the crowns of the mulched trees were nearly twice as large as those of the unmulched ones, and the trunk diameters were about three times greater. In this same experiment, turf nearly excluded the development of fine roots in the top two inches of soil. The mulched trees had much greater root densities in the top six inches of soil.

Northwest Hort Review

by Van M. Bobbitt

Can Grass Stunt Your Tree?

Plant physiologist Gary Watson, in another experiment at the Morton Arboretum, studied the effect of turf and mulch on 20-year-old trees. Seven species were observed over six years. The replacement of turf with an organic mulch increased the fine roots in the top six inches of soil in all species, to some degree (see Table 1).

In another trial, Watson killed the grass around selected trees, but applied no mulch. After only two months, most of the trees with the bare soil treatment showed some increase in fine roots, as compared with those trees growing in turf (see Table 1). The results suggest that red oak and pin oak might be better choices for lawn trees than sugar maple, which competes poorly with turf.

So, what can gardeners do if turf competition is stunting their landscape trees?

1. Always keep turf at least one foot away from the trunk of young trees that are just getting established. Recently planted trees are most affected by turf-grass competition.
2. If possible, replace turf with a 2-4″ layer of organic mulch over the trees' root zone.
3. Replace turf with less aggressive shrubs or herbaceous ground covers.
4. If turf is to remain, additional fertilization and irrigation may overcome the competition.

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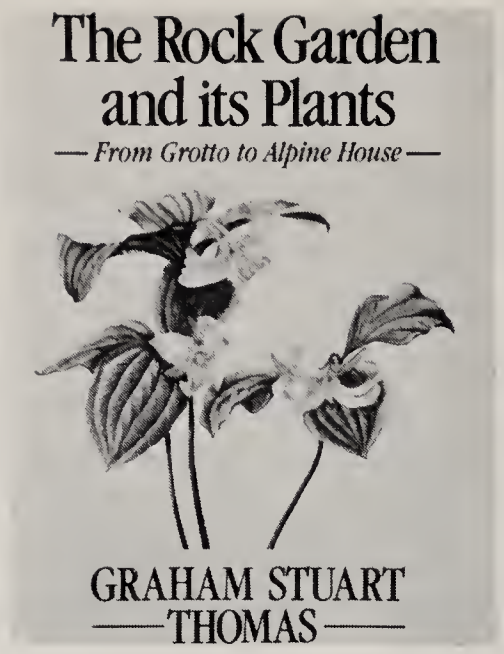
Van M. Bobbitt is the Master Gardener/Urban Horticulture Coordinator, Washington State University Cooperative Extension. He has been a member of the *Washington Park Arboretum Bulletin* board since 1988.

Table 1. Percent increase of fine roots above 15 cm (6 inch) depth (including mulch) compared with grass treatment.

Species	*Bare soil*	*Mulch*
Red maple	0	172
Norway maple	16	90
Sugar maple	113	195
Green ash	38	128
Pin oak	2	51
Red oak	−8	6
Linden	34	127



Book Reviews

The Rock Garden and its Plants—From Grotto to Alpine House. Graham Stuart Thomas. SagaPress, Inc., and Timber Press, Inc., Portland, Oregon. 1989. 266 pages. ISBN 0-88192-139-4.

A Manual of Alpine and Rock Garden Plants. Christopher Grey-Wilson (ed.). Christopher Helm, London, and Timber Press, Portland, Oregon. 1989. 278 pages. ISBN 0-7470-1224-5.

Done well, rock gardening is an exquisite art form that pleases the eye and demands the utmost of skills, imagination, and patience on the part of the practitioner. This special kind of gardening, despite its challenges (and disappointments), has a worldwide following. And for its devotees, there exists a vast library of books and societal magazines on rock gardening. There is always room for new books of high quality that treat the subject in new ways. These two books pass muster, yet are different in approach.

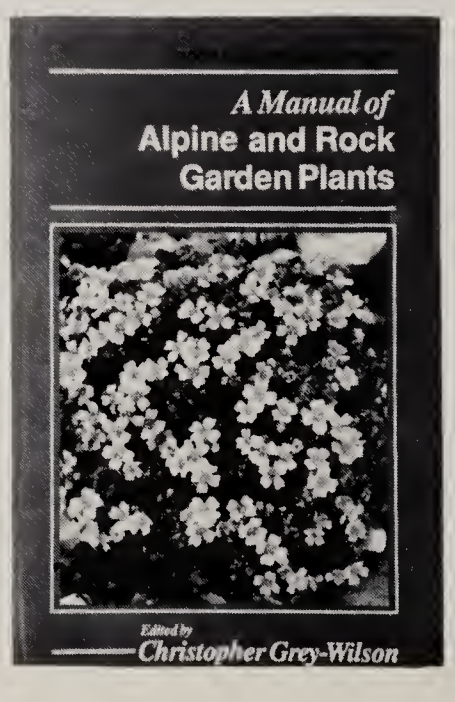
The Thomas book is delightfully unconventional and superb in rendition. It portrays the rock garden art form from its earliest stage (the grotto), down through its Victorian and Edwardian forms, and through to the present. Other chapters develop detailed accounts of rock garden construction, as well as the making of the rockery's kin: screes, peat beds, alpine houses, trough gardens, and alpines on walls. Illustrations are exquisite and meaningful: black-and-white photos of rockeries and alpine plants complement superb paintings of rock plants in color. Unlike most rock garden books, Thomas's book eschews the "A-Z" encyclopedic descriptions of alpine plants, though his checklist/index nearly serves this function. Although it is "veddy British," the book can well serve rock gardeners in the Northwest by setting high standards for the pursuit of this captivating art form.

The Grey-Wilson book is just what its title advertises—a manual. The bulk of the book is an "A-Z" encyclopedia; 247 of its 278 pages are descriptions of alpines and low-growing plants suitable for the rock garden. I estimate over 1,700 kinds are described. Informative synopses of genera are followed by descriptions of each species: size and habit, color of foliage and flowers, place of origin, and flowering season.

Line drawings are few and far between, but a 30-page fascicle in the center of the book has excellent color photos of outstanding alpines. Only twelve introductory pages cover the "how-to-do" of rock gardening and its allied garden forms, whereas the Thomas book devotes 250 pages to these skills.

The Grey-Wilson book should serve well both beginner and the more advanced rock gardeners. But users beware! The book has mistakes of commission (erroneous places of origin) and omission (noteworthy plants missing). For example, among plants I know best (westerners), it is a shame to give *Campanula piperi* away to the Rockies, when it is an Olympic Mountain endemic. And, as Roy Davidson has remarked, the book omits *Phlox* entirely. Rock garden authors such as Reginald Farrer, Davidson, and I strenuously object to its omission! Quibbling aside, this is a good book. I only hope the author has it right for other places of origin beyond my ken.—*Reviewed by A.R. Kruckeberg*

Arthur R. Kruckeberg is a professor of botany at the University of Washington. He and his wife Mareen's four acres north of Seattle, the MsK Nursery, specializes in shrubs and rock garden plants.



For Further Information: **Roses**

by Valerie Easton

People feel strongly about roses. They love antique roses, climbing roses, new varieties of roses. And they write about all of them. The problem with finding information on roses is not the lack of sources, but rather the abundance. Literature-searching skills come second to a critical look at author and index when attempting to sort through the plethora of information, opinions, and preferences. The following is a very selective list of resources.

Peter Beales, one of England's most famous rosarians, has written an encyclopedic guide to growing the best varieties of this century in ***Twentieth Century Roses*** (London: Collins Harvill, 1988). Clean, clear photographs illustrate design, cultivation and, most effectively, the descriptions of over 850 modern roses currently available to the trade in England and worldwide. This volume is a companion to Beales's earlier book, ***Classic Roses*** (London: Collins Harvill, 1985). Both are thorough and authoritative, with the second volume emphasizing old-fashioned roses, shrub roses, and climbers. Together, these two books offer comprehensive information on nearly 2,000 varieties of roses, along with knowledgeable advice on pruning, training, selection, and landscape use.

Arguably, the most stunningly photographed of all the rose books is ***Roses*** by Roger Phillips and Martyn Rix (New York: Random House, 1988). Photos take up more of the space in this book than text, and go a long way in convincing a gardener to overlook mildew and mites to grow these beauties. Not purely inspirational, this title has good descriptions and some basic information on growing roses. But gorgeous color photographs are what make this book special. It does a wonderful job of showing the different types of roses—floribundas, climbers, gallicas, wild roses, etc.—in such beautiful color and marvelous variety that no reader will ever feel satisfied with hybrid teas again.

There are two well-known books on roses that no serious rosarian should be without. The first is the classic ***Roses for English Gardens*** by Gertrude Jekyll, first published in 1902 (reissued, Suffolk, England: Antique Collector's Club, 1982). Her ideas on how to use roses in the landscape are timeless. The photographs of roses in English gardens, growing up the sides of country cottages, and arranged in autumn bouquets, meet Ms. Jekyll's ideal:

> . . . Here we do not want the mind disturbed or distracted from the beauty and delightfulness of the Rose.

The second book that is a must is ***The Complete Book of Roses*** by Gerd Krüssmann (Portland: Timber Press, 1981). Krüssmann was the director of Germany's prestigious National Rosarium for many years, and his book deals comprehensively with the rose in all its aspects. Included is a useful dictionary of rose cultivars, but unique to this title is the extensive information on rose history and legend around the world, including chapters such as "The Rose in German Poetry," "Roses in the Pre-Historic Era," and "The Rose and the Mogul." You have the feeling that if you actually read all 436 pages of this book, you would be a renowned rose expert, too.

A basic book for gardeners who would rather grow healthy roses than become rose experts is ***Growing Good Roses*** by Rayford Clayton Reddell (New York: Harper and Row, 1988). Clearly written with lovely photos, Reddell knowledgeably covers selecting, planting, maintaining, spraying, cutting, pruning, and exhibiting roses, as well as recommending 24 of his favorite modern garden roses.

If you are looking for rose identification and description, turn to ***Simon & Schuster's Guide to Roses*** by Stelvio Coggiatti (New York: Simon & Schuster, 1986) or ***The Dictionary of Roses in Colour*** by S. Millar Gault and Patrick M. Synge (London: Rainbird Reference Books Ltd., 1971). Both list hundreds of roses of various types, with thorough descriptions and color photographs.

Without a Thorn: A Guide to Rose Gardening in the Pacific Northwest, by Stuart Mechlin and Ellen Bonanno (Portland: Timber Press, 1978) is out of print, but available in local libraries. It is valuable for its seasonal Northwest calendar, the discussion of landscape uses in our area, and a list of rose gardens to visit in Washington, Oregon, and British Columbia.

For the most current information on roses, turn to ***The American Rose***, the monthly journal of the American Rose Society (The American Rose, P.O. Box 30,000, Shreveport, Louisiana 71130-0030). A current issue has information on an organic rose garden in Eugene, Oregon; a monthly column for beginning rose growers; and a long list previewing 1990 roses.

To meet other rose fanciers, join the Seattle Rose Society, the oldest horticultural society in Seattle (P.O. Box 42, Medina, Washington 98039). You will receive the local newsletter "**Rose Petals**" and be a part of the group responsible for conceiving, planting, and helping to maintain the wonderful Woodland Park Rose Garden.

If antique roses are your special interest, join the Heritage Roses Group (Northwest regional coordinator: Judi Dexter, 13665 - 41st Avenue South, Kent, Washington 98032). Members receive four issues of "**The Rose Letter.**"

Described above are some of the newest and most useful sources of information on roses, but it is impossible to summarize information on a plant that probably existed twelve to fifteen million years ago, has over 5,000 different varieties, and has been grown and loved by humans for more than 2,000 years. The major impression received from all of these materials is the enduring affection and appreciation people have for the rose in all its forms. This is well expressed by the dedication in Rayford Clayton Reddell's book:

> God gave us memories so we could have roses in winter and mothers forever.

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Valerie Easton is a librarian at the University of Washington Center for Urban Horticulture.

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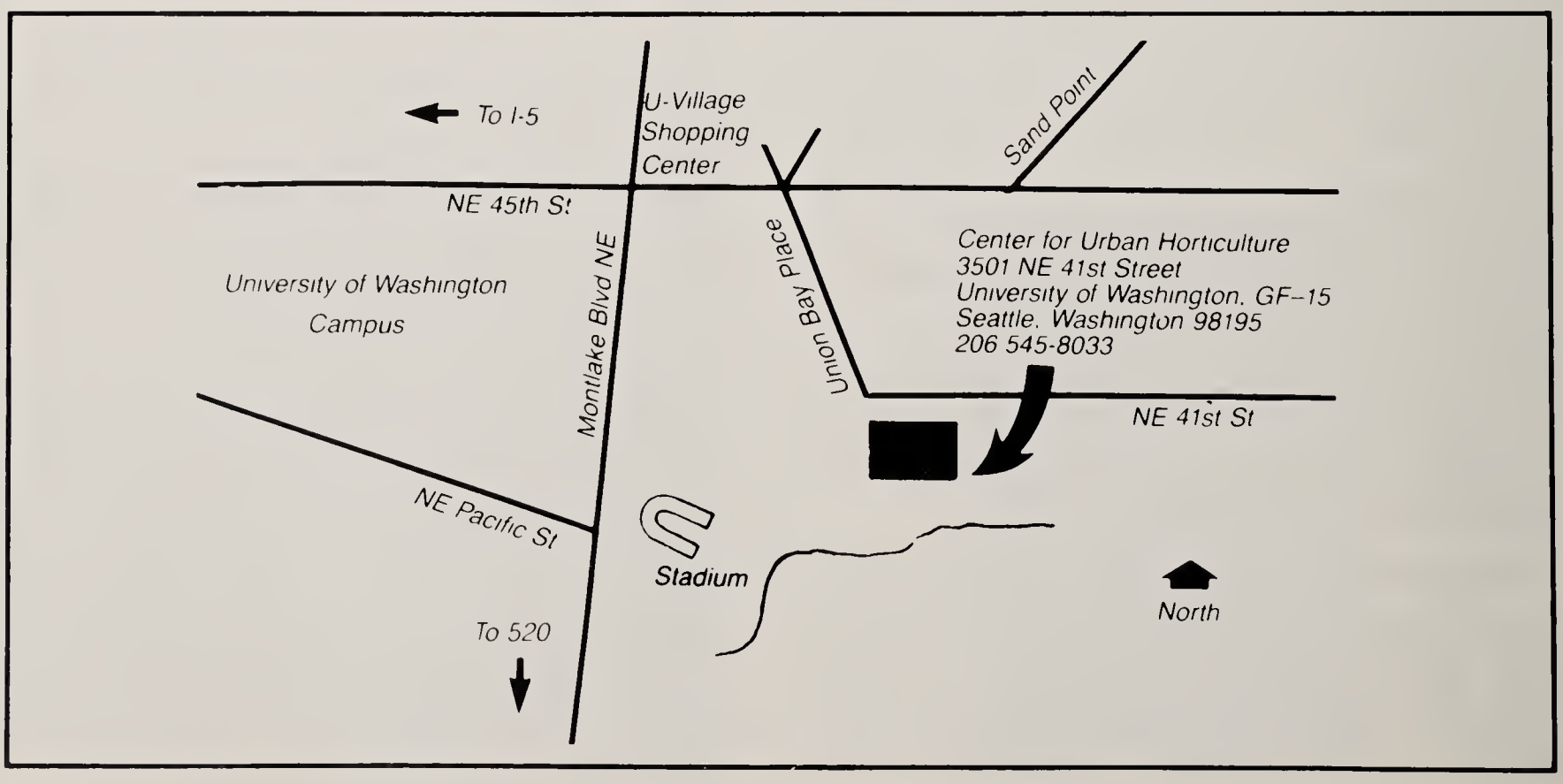

New on the Shelves
of the Elisabeth C. Miller Library

VALERIE EASTON

Armitage, Allan M. **Herbaceous Perennial Plants: A Treatise on their Identification, Culture, and Garden Attributes**. Athens, Georgia: Varsity Press, Inc., 1989

Bown, Deni. **Alba: The Book of White Flowers**. Portland, Oregon: Timber Press, 1989

Brickell, Christopher, and the American Horticultural Society. **Encyclopedia of Garden Plants**. New York: Macmillan, 1989

Burbridge, Joan. **Wildflowers of the Southern Interior of British Columbia and Adjacent Parts of Washington, Idaho, and Montana**. Vancouver, British Columbia: University of British Columbia Press, 1989

Chatto, Beth. **The Green Tapestry**. New York: Simon and Schuster, 1989

Cobb, James L. S. **Meconopsis**. Portland, Oregon: Timber Press, 1989

Cribb, Phillip, and Christopher Bailes. **Hardy Orchids: Orchids for the Garden and Frost-free Greenhouse**. Portland, Oregon: Timber Press, 1989

Gardiner, James. **Magnolias**. Chester, Connecticut: Globe Pequot Press, 1989

Head, William. **Gardening Under Cover: A Northwest Guide to Solar Greenhouses, Coldframes, and Cloches**. Seattle: Sasquatch Books, 1989

Hyatt, Brenda. **Auriculas: Their Care and Cultivation**. London: Cassell, 1989

Kramer, Jack, and the World Wildlife Fund. **The World Wildlife Fund Book of Orchids**, rev. ed. New York: Abbeville Press, 1989

Langdon, Brian. **Begonias: The Care and Cultivation of Tuberous Varieties**. London: Cassell, 1989

Lewis, Peter, and Margaret Lynch. **Campanulas**. Portland, Oregon: Timber Press, 1989

MacKenzie, David S. **Complete Manual of Perennial Ground Covers**. Englewood Cliffs, New Jersey: Prentice Hall, 1989

Monckton, Shirley. **Arranging Flowers: Techniques of Floristry**. New York: Sterling Publishing Company, Inc., 1989

Norse, Elliott A. **Ancient Forests of the Pacific Northwest**. Washington, D.C: Island Press, 1990

Ottesen, Carole. **Ornamental Grasses: The Amber Wave**. New York: McGraw-Hill, 1989

Schofield, Janice J. **Discovering Wild Plants: Alaska, Western Canada, the Northwest**. Anchorage, Alaska: Alaska Northwest Books, 1989

Stapeley Water Gardens. **Waterlilies and Other Aquatic Plants**. New York: Henry Holt and Company, 1989

Thompson, Peter. **Creative Propagation: A Grower's Guide**. Portland, Oregon: Timber Press, 1989

Errata

On page 9, line 15, column 3, 52:4, the heights of the two specimens of *Sequoiadendron giganteum* should be "100'" and "90',' respectively.

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Northwest Garden Explorer: Lakewold Gardens

by Scot Medbury

Photos by Steven R. Lorton

The relative paucity of public gardens in the Puget Sound area is more than compensated for by the quality of those the region does possess. Even visitors from garden-rich England marvel at the landscape beauty of the Bloedel Reserve, at the comprehensiveness of the collections at the Rhododendron Species Foundation, or at the size and rarity of trees and shrubs in the Washington Park Arboretum.

One western Washington garden embraces all these qualities: fine design, special collections and choice, mature specimen plants—Tacoma's Lakewold Gardens. Here, the natural blessings of a wooded, lakeside site have been carefully and intelligently enhanced to create a garden that in all ways represents the best of the Northwest.

Lakewold reaffirms a long-standing tradition of fine gardening in the Lakes District south of Tacoma. The grandest gardens ever created in the Northwest were developed in this area during the ''Gatsby'' era of the 1920s and earlier, bringing in designers such as J.F. Dawson of the Olmsted Brothers (architect of the 1936 plan for the Washington Park Arboretum) and Seattle master Otto Holmdahl. Of several dozen estates, Lakewold has the only garden that remains intact.

The history of this garden has been well chronicled in national publications and in an hour-long documentary film entitled ''Lakewold, Where the Blue Poppy Grows,'' which airs occasionally on PBS television. Enduring features such as the rustic stone and wood fence, and a herringbone-patterned brick walk, recall Lakewold's earlier incarnation as ''Inglewood.'' However, most of the present-day garden is the result of the special collaboration between Mrs. Corydon Wagner, Jr., who has lived and gardened at Lakewold since 1938, and the innovative California landscape architect Thomas Church, author of the classic *Gardens are for People*.

Following Church's maxim, Lakewold Gardens is ''for people,'' too, thanks to the efforts of the non-profit Friends of Lakewold and the foresight of the Wagner family. The garden opened to the public in April 1989, greeting thousands of new visitors in its first season and exposing them to fine garden design and an increasingly sophisticated array of plants.

At the center of the estate rests the Wagner home, approached by a pebble drive that curves slowly to a broad forecourt outside the front door. It was remodeled in the early 1960s in the Georgian style. The house is faced in a pale pink Tennessee brick, the perfect backdrop to the dappled pink, white, and green leaves of an *Actinidia kolomikta* vine planted upon it. On the west side of the house, a glassed-in porch entwined in *Hoya carnosa* leads out into the formal garden, taking the visitor past boxwood parterres and topiaries on the way to a gazebo covered with an old specimen of the climbing rose 'Kathleen'. (See article by Kendall Gambrill, this issue.) Nearby is one of Church's masterpieces: the elegant quatrefoil swimming pool.

One can fall in love with Lakewold just for its trees. The estate is on the edge of the glacial outwash Tacoma prairie, home to large stands of the Garry oak (*Quercus garryana*). These natives, along with mammoth Douglas-firs, form the main overstory trees on the 10-acre garden site, though sixty-year-old European beeches add their own commanding presence. Especially picturesque is a huge, gnarled Garry oak that leans toward the shore of Gravelly Lake and on clear days frames a spectacular view of Mt. Rainier.

If the natural tree canopy at Lakewold is interesting, the understory trees are even more so. In the woodland between the formal parterre garden and the lake are specimen trees of Antarctic beech (*Nothofagus antarctica*), Persian ironwood (*Parrotia persica*), and the Chilean fire tree (*Embothrium coccineum*). The visitor can find cherries throughout the garden, including the lovely pale-green flowered 'Ukon', and some Yoshino cherries (*Prunus* x *yedoensis*) which were imported from Japan in 1924 and have outlived their original counterparts in Washington, D.C. Lakewold also boasts a small pinetum, where the late Corydon Wagner tested the performance of exotic conifers, including the aesthetically controversial monkey puzzle tree (*Araucaria araucana*).

Mrs. Wagner has pursued a wide range of horticultural interests over the years, making a collection of *Lewisias* (which includes an unusual white *L. tweedyi*), an Elizabethan herb garden replete with marble wellhead, and a rose garden featuring old roses (see Kendall Gambrill's article, this issue).

Rhododendrons were an early passion, and along

Quercus garryana *frames Gravelly Lake at Lakewold Gardens.*

The knot garden at Lakewold (right).

the drive such stunning species as *Rhododendron roxieanum* var. *oreonastes* luxuriate in the shade along with favorite hybrids like 'Bow Bells', a likeness of which is carved in bas relief above the front door to the house. Natives such as our deciduous and evergreen huckleberries complement the rhododendron plantings in the front woodland, with cyclamen covering the ground beneath.

Lakewold is full of secret places, all spilling over with special flowers and rock garden plants. The blue poppy (*Meconopsis betonicifolia*) mentioned in the PBS film is uncommon, but it blooms gloriously at Lakewold. So does *Cardiocrinum giganteum*, which sends up eight-foot flower stalks from a moist spot near the masterfully laid rocks of a naturalistic water course and pool. In a protected little court on the southeast side of the house, find the tender *Rhododendron fragrantissimum* and a strange daphne relative, *Edgeworthia papyrifera*, an exceedingly rare plant for our area. Tucked into one of the delightful rockeries that dot the hillside above the lake is the famed *Kalmiopsis leachiana*, now protected in the Kalmiopsis Wilderness in Oregon's Siskiyou Mountains.

Though Lakewold always has been maintained immaculately, an increase in gardening activity has accompanied its transition from private estate to public garden. Head gardener Martha Robbins has tackled many needed projects. She has moved plants to where they will receive better light and prunes carefully to raise the tree canopy in places. The shade garden developed by Church around the venerable "wolf tree" has been renovated with great success. Several thousand linear yards of despicable English ivy have been cut from smothering positions on tree trunks. Numerous English holly and Portuguese laurel trees, inappropriate in such a refined setting, also have been removed.

New developments occur all the time. The latest project is a fern garden sponsored by the Hardy Fern Foundation, which will exhibit both native and exotic ferns, and companion plants. It appears Lakewold is a garden that will continue to improve, as it has done for the past seventy-five years.

Docent-guided tours of Lakewold Gardens are available Tuesday, Thursday, and Saturday mornings and afternoons, April through September. Reservations are required. Call (206) 584-3360. Admission is $5.00 (students, $3.00). Children and pets are not permitted. For more information, write to the Friends of Lakewold, P.O. Box 1121, Tacoma, Washington 98401.

Scot Medbury is finishing a master's degree in public garden administration and environmental interpretation at the Center for Urban Horticulture, University of Washington. He is a member of the editorial board of the *Washington Park Arboretum Bulletin*.

In the Washington Park Arboretum

by Christina Pfeiffer
and Timothy Hohn

New Plants

Each winter, we clean up specific collection areas of the Arboretum. Blackberry and woody brush is removed; beds are weeded and mulched; collection plants are pruned, transplanted or removed as appropriate; and new plants may be added.

This year, watch for the results of our work on the west side of the Lagoon, in the *Viburnum* Collection and the Holly Collection.

Several plants of interest have been added to the Arboretum collections since fall of 1989. A grouping of *Pinus pityusa*, *Exochorda tianschanica* (pearlbush), and *Caragana frutex* (Russian peashrub) now enhance the two existing *Acer macrophyllum* 'Seattle Sentinel' at the intersection of Lake Washington Boulevard East and Boyer Avenue East.

Three new camellia hybrids from the National Arboretum were added to the Joseph A. Witt Winter Garden: *Camellia* 'Ack Scent Sno', *C.* 'Ack Scent Star', and *C.* 'Ack Scent White'.

A small grove of *Cedrela sinensis* (Chinese toon) was planted at the northwest corner of Conifer Meadows. These deciduous trees will grow to about 50 feet tall and have a similar habit to *Ailanthus altissima* (tree of heaven). It is the only hardy member of the mahogany family (Meliaceae).

Plant Records

The first and most critical phase of a major computerization project has been completed by Jan Pirzio-Biroli (Arboretum and Center for Urban Horticulture staff) and volunteers Eileen MacDonald, Pat Killingsworth, and Karen Panek. They have entered the basic taxonomic and source information for the entire plant collection into our computer—approximately 35,000 accessions. In phase two of this project, all the field observations, now recorded on cards, will be entered into the computer data base. By using the computer we have a more efficient way to store, access, standardize, edit, and utilize our plant records.

Inventory and Mapping

The Center for Urban Horticulture was awarded a series of grants from the Institute of Museum Science, thus allowing the creation of a complete inventory and mapping system to keep better track of plant collections on the grounds. Together with the plant records data base, nearly all Arboretum curatorial and maintenance records will be managed electronically at a work station dedicated to plant records and maps. As part of the computerization process, all inventory and mapping data will be stored, accessed, and edited on a Geographic Information System (computer program), which ordinarily has been used for soil conservation and forestry mapping. This is a unique application of the program and will be the first time it is applied to the needs of an arboretum.

Christina Pfeiffer is the horticulturist for the Washington Park Arboretum.

Tim Hohn has been the Arboretum's curator since 1986.

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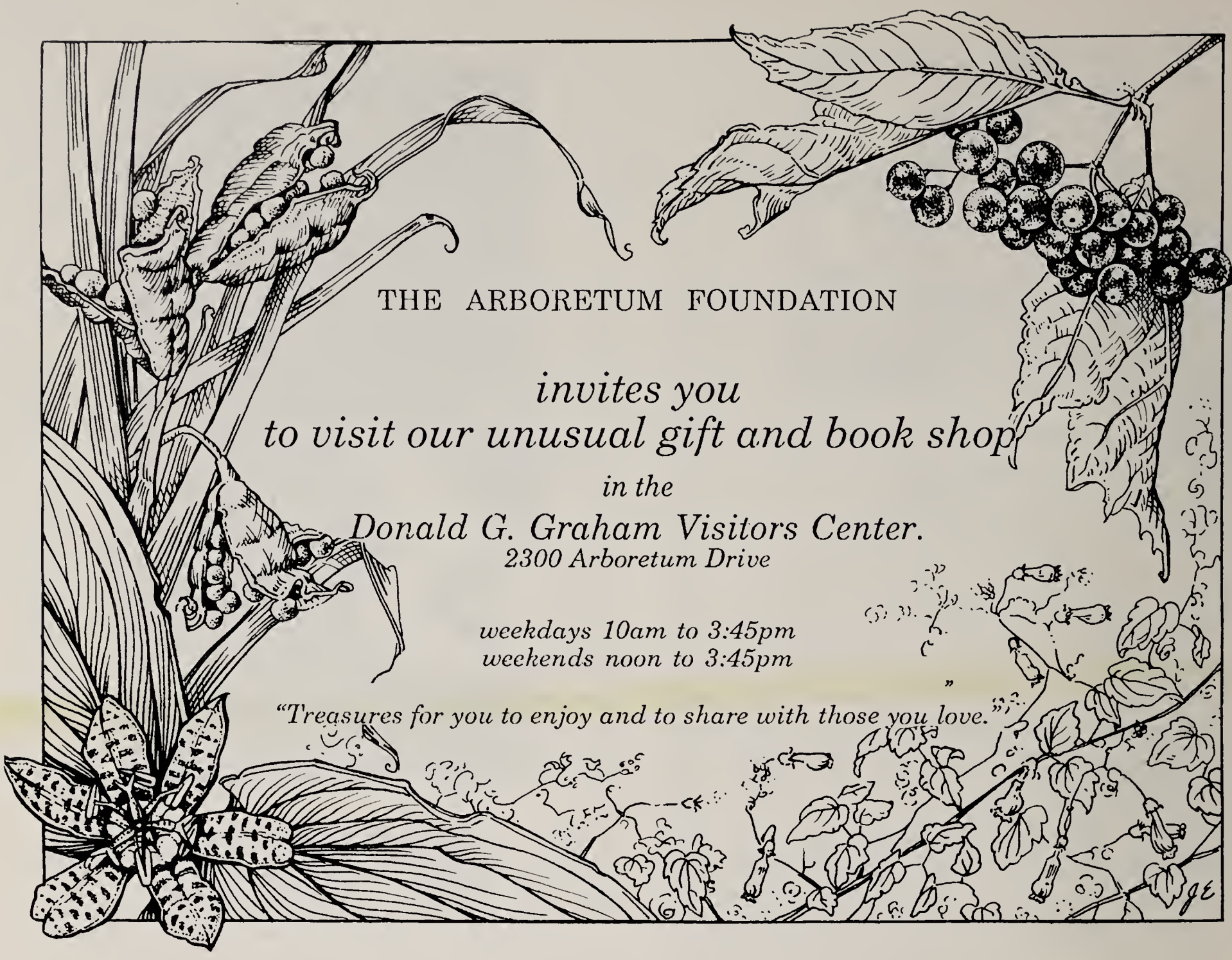

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